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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--|-------------|----------------------|---------------------------------|-----------------------------|
| 10/599,304   | 04/25/2008  | George V. Franks     | 051793.0001.PCUS02              | 6734                        |
| 27148 7590 04/06/2011<br>POL SINELLI SHUGHART PC<br>700 W. 47TH STREET<br>SUITE 1000<br>KANSAS CITY, MO 64112-1802 |             |                      | EXAMINER<br>HRUSKOCI, PETER A   |                             |
|  |             |                      | ART UNIT<br>1776                | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>04/06/2011 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspt@polsinelli.com

## Office Action Summary

Application No.

10/599,304

Applicant(s)

FRANKS ET AL.

Examiner

/Peter A. Hruskoci/

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 66-103 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 66-103 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/1/07 and 1/25/11</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

The disclosure is objected to because of the following informalities: In the specification on page 9 line 18 “hydroxyethy” should be changed to - hydroxyethyl -; on page 13 line 34 “sulfanate” and “polysulfanamide” should be changed to – sulfonate – and – polysulfonamide -; and on page 15 line 22 “ethelyne” should be changed to – ethylene -.

Appropriate correction is required.

Claims 66-103 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 66 and 67 “conditioned state”, in claim 70 “may be”, in claim 79 “maybe”, in claim 88 “other polymers”, “such as” and “other related”, in claim 93 “similar groups”, and in claim 100 “Pluronics” are vague and indefinite because it is unclear how these terms further limit the claims. In claim 82 “sulfanate” and “polysulfanamide”, in claim 88 “hydroxyethyl”, and in claim 102 “polyethelyne” are erroneous, and should be changed to – sulfonate -, - polysulfonamide -, - hydroxyethyl – and – polyethylene -, respectively. In claim 66 “the condition”, in claim 67 “the consolidation”, and in claim 74 “the light stimulus” lack clear antecedent basis. Claims 66 and 67 are considered incomplete because it is essential the instant methods include steps for forming a solids-rich phase and liquids-rich phase, and for separating the solids-rich phase from the liquids-rich phase. Claim 90 is considered incomplete because it is essential the chemical additive be utilized with a specific wavelength of light.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained **though** the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 66-75, 77-85, 96, and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. 4,279,756. Weiss et al. disclose (see col. 3 line 17 through col. 8 line 25) a method of controlling a suspension or a bed of solid particles substantially as claimed. The claims differ from Weiss et al. by reciting that the methods include applying one or stimuli to the suspension or bed to control inter-particle forces between solid particles. It is submitted that the addition of the coagulant/adsorbent, caustic soda, polyelectrolytes, and natural polymeric flocculants in Weiss et al. would appear to apply a stimuli including a change in pH, that is patentably indistinguishable from the stimuli applied in the instant claims. It would have been obvious to one skilled in the art to modify the method of Weiss et al. by applying the recited stimuli, to aid in removing the solid particles from the suspension. With regard to claim 73, it is submitted that the method of Weiss et al. appears to be capable of operating with substantially visible light. With regard to claims 83-85, it is submitted that the teachings of Weiss et al. as applied above, include the use of acrylic acid polymers and polysaccharides such as starch, respectively.

Claims 86-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. 4,279,756 as above, and further in view of Guillet et al. 4,536,294. The claims differ from Weiss et al. by reciting that the methods include the use of specific temperature-sensitive polymers. Guillet et al. disclose (see col. 2 line 19 through col. 6 line 27, and Example 16) that it is known in the art to utilize the recited polymers, to aid in flocculating clay fines and settling the flocculated clay fines from aqueous suspensions. It would have been obvious to one skilled in the

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art to modify the method of Weiss et al. by utilizing the recited polymers in view of the teachings of Guillet et al., to aid in removing the solid particles from the suspension.

Claims 97-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. 4,279,756 as above, and further in view of Lissant 3,194,758. The claims differ from Weiss et al. by reciting that the methods include the use of specific copolymers. Lissant disclose (see col. 1 line 23 through col. 2 line 65, and col. 9 line 1 through col. 10 line 19) that it is known in the art to utilize the recited copolymers, to aid in agglomerating solids and settling the agglomerated solids from aqueous suspensions. It would have been obvious to one skilled in the art to modify the method of Weiss et al. by utilizing the recited copolymers in view of the teachings of Lissant, to aid in removing the solid particles from the suspension. The specific block or comb copolymers utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific suspension or bed treated and results desired, absent a sufficient showing of unexpected results.

Claims 66 and 67 properly written to overcome the above 35 USC 112 rejections and to include claim 90, would be allowable.

The restriction requirement dated 8/30/10 has been withdrawn in view of applicants' Remarks and the traverse dated 2/23/11.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Peter A. Hruskoci/ whose telephone number is (571) 272-1160. The examiner can normally be reached on Monday through Friday from 8:00AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter A. Hruskoci/  
Primary Examiner  
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3/31/11